

REMARKS

Claims 1 and 3-5 are all the claims pending in the application. Applicants have added new claims 6-9 to more completely cover the invention.

Claim 6 is a combination claim that combines the features of claims 1, 3 and 4 and is therefore of different and narrower scope than any pending claim; Claim 7 is a combination of claims 1, 3, 4 and 5 is therefore of a different and narrower scope than any pending claim; claim 8 recites that the inner and outer cladding (as opposed to the ring - see claim 1) have a phosphorus content in the range of 0.03 wt% to 0.1 wt%; and claim 9 depends from claim 8 and recites that the ring has a phosphorus content in the range of 0.03 wt% to 0.1 wt%.

For the following reasons, it is submitted that the claims patentably distinguish over the cited art applied by the Examiner.

As noted by the Examiner, Anderson teaches an inner cladding with a phosphorus content of 0.7 mol%. However, the Examiner's assertion that this corresponds to a phosphorus content of 0.01% by weight is incorrect.

Assuming the presence of 100 moles, the following is observed:

Chemical compound	Mol	Structure	Molecular weigh (grammes/mol)	Weight (grammes)
Silica	98.5	SiO ₂	60 (28+16+16)	5910
Fluorine	0.8	F	19	15.2
Phosphorous oxide	0.7	PO _{2.5}	71 (31+(2.5x16))	49.7
Total	100	--	--	5974.9

As shown in the table, 100 mols leads to a total weight of 5874.9 grams. The weight percentage of phosphorus oxide equals $49.7/5974.9 = 0.83$ wt%. The percentage of the weight of

phosphorus in phosphorus oxide is (31/71). Accordingly, the weight percentage of phosphorus in the inner cladding is $(31/71) \times 0.83 \text{ wt\%} = 0.36\%$. As noted above, claim 1 recites a weight percentage of between 0.03 and 0.1. Thus, the weight percentage of phosphorus in Anderson is far outside of the claimed range. Indeed, it is more than three times the maximum weight percentage defined by the claim. Therefore, Anderson, which the Examiner relies upon for the claimed phosphorus content, does not have a phosphorus content as claimed.

Furthermore, one of ordinary skill in the art would not have lowered the phosphorus content of the inner cladding of Anderson from the 0.36 wt % of Anderson to 0.1 wt % or less. Considering the much higher amount disclosed in Anderson, such a modification would require an extreme reduction in phosphorus content. Anderson discloses a CVD process and, as is known to one of ordinary skill in the art, lowering the phosphorus content of such CVD processes normally causes significant problems. Accordingly, one of ordinary skill in the art would not have been motivated to perform an extreme reduction of phosphorus to reach the claimed invention and sufficient motivation for such a modification is not present in the cited references. Thus, claim 1 is patentable over the prior art.

Still further, there is no teaching or suggestion of both the inner cladding and the outer cladding having a phosphorus content in the range of 0.03 wt% to 0.1 wt%, as required by claim 8. With respect to claim 9, there is no teaching or suggestion of the ring also having this phosphorous content.

Finally, the prior art does not teach or suggest the perform production process having the combination of steps recited in claims 6 and 7.

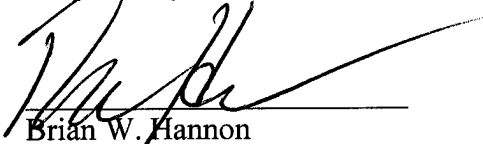
AMENDMENT UNDER 37 C.F.R. § 1.114(c)
U.S. Application No.: 10/720,670

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In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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